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REMARKS

Reconsideration is respectfully requested in view of the above amendments and following remarks. Claims 1, 4, 5, 11, 15 and 16 are amended, which is supported by, for example, Figs. 1A, 1B, 3A, 4 and 5. No new matter has been added. Claims 1-18 are pending.

Claim rejections - 35 U.S.C. § 102

Claims 1, 2, 4, 5, 10, 11, 13, 15, 16 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Juengling (US 6,627,549). Applicant respectfully traverses the rejection.

Claim 1 is directed to a semiconductor device having plurality of wirings. The wirings are formed adjacent to each other. Each wiring comprises a first portion extending in a first direction, a second portion extending in a second direction different from the first direction and a corner at which the first and second portions meet. The first portions of the adjacent wirings are parallel to each other and the second portions of the adjacent wirings are parallel to each other. A clearance is also formed between the adjacent wirings.

Juengling teaches in Fig. 16 a wiring pattern with an existing live metal region 610 having a corner and an existing live metal region 620. 630 is added to the face of 610, 610a, to form the protrusion at the inner corner 610. 620 is parallel to one side of the existing live wire 610. 620 has only one linear pattern part and terminates at 620a, thus 620 does not have a corner, only 610 has a corner. Therefore, Juengling fails to teach or suggest a plurality of wirings formed adjacent to each other, each wiring comprises a first portion extending in a first direction, a second portion extending in a second direction different from the first direction and a corner at which the first and second portions meet, the first portions of the adjacent wirings being parallel to each other and the second portions of the adjacent wirings being parallel to each

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other. Thus Juengling fails to anticipate independent claim 1. Withdrawal of the rejection is respectfully requested.

Claims 2 and 10 depend from claim 1. For the reasons discussed above for claim 1, withdrawal of the rejection is respectfully requested.

Claim 4 is directed to a semiconductor device having a plurality of conductive film patterns formed on the semiconductor substrate. The conductive film patterns are separated with a certain clearance by a T-shaped groove or a cross-shaped groove, the T-shaped groove or a cross-shaped being composed of two linear grooves. A protrusion is formed at a corner of at least one of the conductive film patterns positioned at a crossing of the two linear grooves constituting the T-shaped or cross-shaped groove, protruding from one corner of the conductive film patterns toward the T-shaped or cross-shaped groove.

Fig. 12 of Juengling discloses a wiring pattern composed of an existing live metal 200 and an added floating metal 220. A live metal 230 is added to 200. A groove that can be considered a T-shaped groove is formed at the left end of the metal pattern, which is composed of two grooves, i.e. a transverse groove changing its width in the midway and a longitudinal groove. 230 corresponds to a protrusion and is in contact with a side of 200 and protrudes into a T-shaped groove. Though 230 forms a protrusion from one side of 200, it is not formed at a corner positioned at the intersection formed by crossing the transverse groove and the longitudinal groove, but a corner that is positioned at the left edge of the transverse groove. Thus, 230 is not formed at a corner positioned at an intersection formed by crossing

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two grooves configuring a T-shaped groove or a cross-shaped groove. Therefore, Juengling fails to teach or suggest a T-shaped groove or cross shaped groove is composed of two linear grooves and a protrusion is formed at a corner of at least one of the conductive film patterns positioned at a crossing of the two linear grooves constituting the T-shaped or cross-shaped groove, protruding from one corner of the conductive film patterns toward the T-shaped groove or the cross-shaped groove. Thus Juengling fails to anticipate independent claim 4. Withdrawal of this rejection is respectfully requested.

Claim 5 is directed to a semiconductor device having a configuration in which the first and second wirings are formed substantially in parallel with a predetermined spacing on the semiconductor substrate, the second wiring having an end at a point intermediate the length of the first wiring. A small protrusion is formed at a part of the end of the second wiring so as to protrude from a side of the second wiring toward a side of the first wiring perpendicularly with respect to a direction that the second wiring extends, or at least one small protrusion is formed at a part of a side of the first wiring that faces the end of the second wiring so as to protrude toward the second wiring perpendicularly with respect to a direction that the first wiring extends.

Juengling discloses in Fig. 16 an existing live metal 610 and an existing live metal and the bottom edge of 620 are parallel to each other, 610a and 620a are parallel to each other. Live metal 631 and 632 are added to an edge of 620a, protruding toward 610a parallel to the side 620a. 631 and 632 are formed to

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protrude in a direction parallel to the direction that the wiring extends toward the wiring 610. 620 is not formed to protrude perpendicular to the direction that 620 extends. Therefore, Juengling fails to teach or suggest a protrusion formed at a part of the end of the second wiring so as to protrude from a side of the second wiring toward a side of the first wiring perpendicularly with respect to a direction that the second wiring extends, or at least one small protrusion formed at a part of a side of the first wiring that faces the end of the second wiring so as to protrude toward the second wiring perpendicularly with respect to a direction that the first wiring extends.

Further, Juengling discloses in Fig. 15 existing live metal 510 and existing live metal 520 that are parallel to each other, where live metal 521, 522 and 523 are added to a side part of 520 toward 510, decreasing the clearance. Since 521, 522 and 523 are added over the full length of the side of 520 there is no indication that 521, 522 or 523 are small protrusions. Juengling fails to teach or suggest a small protrusion is formed at a part of the end of the second wiring so as to protrude from a side of the second wiring toward a side of the first wiring perpendicularly with respect to a direction that the second wiring extends, or at least one small protrusion is formed at a part of a side of the first wiring that faces the end of the second wiring so as to protrude toward the second wiring perpendicularly with respect to a direction that the first wiring extends. Thus, Juengling fails to anticipate independent claim 5. Withdrawal of the rejection is respectfully requested.

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Claim 11 is directed to a method of manufacturing a semiconductor device comprising the components of claim 1. Therefore, Juengling fails to anticipate independent claim 11.

Withdrawal of the rejection is respectfully requested.

Claim 18 depends indirectly from claim 11. For the reasons discussed above for claim 11, withdrawal of this rejection is requested.

Claim 15 is directed to a method of manufacturing a semiconductor device comprising the components of claim 4. Therefore, Juengling fails anticipate independent claim 15.

Withdrawal of this rejection is respectfully requested.

Claim 16 is directed to a method of manufacturing a semiconductor device comprising the components of claim 5. Therefore, Juengling fails to anticipate independent claim 16.

Withdrawal of the rejection is respectfully requested.

Claim rejections - 35 U.S.C. § 103

Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juengling (US 6,627,549) in view of Hartranft et al. (US 5,846,874). Applicant respectfully traverses this rejection. Claims 3 and 14 depend from claims 1 and 11 respectively. For the reasons discussed above for claims 1 and 11 regarding Juengling, withdrawal of the rejection is respectfully requested. Hartranft does not remedy the deficiencies of Juengling.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juengling (US 6,627,549) in view of Jain et al. (US 6,653,717). Applicant respectfully traverses this rejection. Claims 6, 7, and 8 depend from claims 1, 4 and 5 respectively. For the reasons discussed above for claims 1, 4 and 5 regarding Juengling, withdrawal of the rejection is respectfully requested. Jain does not remedy the deficiencies of Juengling.

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Claim 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juengling (US 6,627,549). Applicant respectfully traverses this rejection. Claims 9 and 17 depend from claims 1 and 11 respectively. For the reasons discussed above for claims 1 and 11 regarding Juengling, withdrawal of the rejection is respectfully requested.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Juengling (US 6,627,549) in view of Jain et al. (US 6,653,717) and in further view of Wu et al. (US 2004/0056351). Applicant respectfully traverses this rejection. Claim 12 depends from claim 11. For the reasons discussed above for claim 11 regarding Juengling, withdrawal of the rejection is respectfully requested. Neither Jain nor Wu remedies the deficiencies of Juengling.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested. Any questions or concerns regarding this communication can be directed to the undersigned attorney, Douglas P. Mueller, Reg. No. 30,300, at (612)371.5237.

Respectfully submitted,



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By

A handwritten signature in black ink, appearing to be "D. P. Mueller", written over a horizontal line.

Douglas P. Mueller
Reg. No. 30,300

DPM:smm